CLAIMS

What is claimed is:

1. A circuit for use in an RFID tag, comprising:

a first RF port;

a first modulating switch configured to selectively couple and uncouple the first RF port to a first reference voltage responsive to a modulating signal;

a second RF port; and

a second modulating switch configured to selectively couple and uncouple the second RF port to a second reference voltage responsive to the modulating signal.

2. The circuit of claim 1, wherein

the RFID tag has an antenna system adapted to receive RF signals of diverse polarizations,

the first RF port is adapted to receive an RF signal of a first polarization, and

the second RF port is adapted to receive an RF signal of a second polarization.

3. The circuit of claim 1, wherein

the first reference voltage is equivalent to the second reference voltage.

4. The circuit of claim 1, further comprising:

a connecting switch configured to selectively couple and uncouple the first RF port to the second RF port responsive to a control signal.

5. The circuit of claim 4, wherein

the control signal is the modulating signal.

6. The circuit of claim 4, wherein

the connecting switch includes a transistor.

7. The circuit of claim 6, wherein

the transistor is one of a MOSFET, a jFET, a BJT, a MESFET, a FinFET, an HBT, an IGFET, and a TFT.

8. A device for use in an RFID tag, comprising:

means for generating a modulating signal in response to a first signal received at a first RF port;

means for coupling and uncoupling the first RF port to a first reference voltage responsive to the modulating signal; and

means for coupling and uncoupling a second reference voltage to a second RF port responsive to the modulating signal.

9. The device of claim 8, wherein

the first reference voltage is equivalent to the second reference voltage.

10. The device of claim 8, further comprising:

means for coupling and uncoupling the first RF port to the second RF port responsive to a control signal.

11. The device of claim 10, wherein

the control signal is the modulating signal.

12. The device of claim 10, wherein

the means for coupling and uncoupling the first RF port to the second RF port includes a transistor.

13. The device of claim 12, wherein

the transistor is one of a MOSFET, a jFET, a BJT, a MESFET, a FinFET, an HBT, an IGFET, and a TFT.

14. A method for using a circuit for an RFID tag, comprising:

receiving a first signal at a first RF port;

generating a modulating signal in response to the first received signal;

coupling and uncoupling the first RF port to a first reference voltage responsive to the modulating signal; and

coupling and uncoupling a second reference voltage to a second RF port responsive to the modulating signal.

15. The method of claim 14, wherein

the first reference voltage is equivalent to the second reference voltage.

16. The method of claim 14, further comprising:

coupling and uncoupling the first RF port to the second RF port responsive to a control signal.

17. The method of claim 16, wherein

the control signal is the modulating signal.

18. A circuit for use in an RFID tag, comprising:

a first RF port;

a second RF port; and

a connecting switch configured to selectively couple and uncouple the first RF port to the second RF port responsive to a control signal.

19. The circuit of claim 18, wherein

the RFID tag has an antenna system adapted to receive RF signals of diverse polarizations,

the first RF port is adapted to receive an RF signal of a first polarization, and

the second RF port is adapted to receive an RF signal of a second polarization.

20. The circuit of claim 18, wherein

the connecting switch includes a transistor.

21. The circuit of claim 20, wherein

the transistor is one of a MOSFET, a jFET, a BJT, a MESFET, a FinFET, an HBT, an IGFET, and a TFT.

22. The circuit of claim 18, further comprising:

a first modulating switch configured to selectively couple and uncouple the first RF port to a first reference voltage responsive to a first modulating signal; and

a second modulating switch configured to selectively couple and uncouple the second RF port to a second reference voltage responsive to a second modulating signal.

23. The circuit of claim 22, wherein

the first modulating switch includes a transistor.

24. The circuit of claim 22, wherein

the first reference voltage is equivalent to the second reference voltage.

25. The circuit of claim 22, wherein

the first modulating signal is different than the second modulating signal.

26. The circuit of claim 22, wherein

the first modulating signal alternates at a different frequency than the second modulating signal.

27. The circuit of claim 22, wherein

the first modulating signal alternates at the same frequency but with a different phase than the second modulating signal.

28. The circuit of claim 22, wherein

the first modulating signal is the same as the second modulating signal.

29. The circuit of claim 22, wherein

the first modulating signal is the control signal.

30. A device for use in an RFID tag, comprising:

means for generating a control signal in response to a first signal received at a first RF port; and

means for coupling and uncoupling, responsive to the control signal the first RF port to a second RF port.

31. The device of claim 30, wherein

the means for coupling and uncoupling the first RF port to the second RF port includes a transistor.

32. The device of claim 31, wherein

the transistor is one of a MOSFET, a jFET, a BJT, a MESFET, a FinFET, an HBT, an IGFET, and a TFT.

33. The device of claim 30, further comprising:

means for coupling and uncoupling the first RF port to a first reference voltage responsive to a first modulating signal; and

means for coupling and uncoupling the second RF port to a second reference voltage responsive to a second modulating signal.

34. The device of claim 33, wherein

the first reference voltage is equivalent to the second reference voltage.

35. The device of claim 33, wherein

the first modulating signal is different than the second modulating signal.

36. The device of claim 33, wherein

the first modulating signal alternates at a different frequency than the second modulating signal.

37. The device of claim 33, wherein

the first modulating signal alternates at the same frequency but with a different phase than the second modulating signal.

38. The device of claim 33, wherein

the first modulating signal is the same as the second modulating signal.

39. The device of claim 33, wherein

the first modulating signal is the control signal.

40. A method for using a circuit for an RFID tag, comprising:

receiving a first signal at a first RF port;

generating a control signal in response to the first received signal; and

coupling and uncoupling, responsive to the control signal the first RF port to a second RF port.

41. The method of claim 40, further comprising:

coupling and uncoupling the first RF port to a first reference voltage responsive to a first modulating signal; and

coupling and uncoupling the second RF port to a second reference voltage responsive to a second modulating signal.

42. The method of claim 41, wherein

the first reference voltage is equivalent to the second reference voltage.

43. The method of claim 41, wherein

the first modulating signal alternates at a different frequency than the second modulating signal.

44. The method of claim 41, wherein

the first modulating signal alternates at the same frequency with at a different phase than the second modulating signal.

45. The method of claim 41, wherein

the first modulating signal is the same as the second modulating signal.

46. The method of claim 41, wherein

the first modulating signal is the control signal.

47. A semiconductor device for use in an RFID tag, comprising:

first and second RF ports;

a substrate having first, second and third implants containing dopants of a first polarity, wherein the first and second implants are separated by respective first and second transistor channels from the third implant, and wherein the first and second implants are configured to be electrically coupled with the first and second RF ports respectively; and

a conductive layer over the substrate and separated from the substrate by an insulating layer, the conductive layer configured to affect the first channel and the second channel concurrently.

48. The device of claim 47, wherein

the first and second RF ports are formed on the substrate.

49. The device of claim 47, wherein

the first polarity is n type.

50. The device of claim 47, wherein

the first polarity is p type.

51. The device of claim 47, wherein

the substrate has a fourth implant coupled to the first implant and a fifth implant coupled to the second implant,

a third channel is defined between the fourth implant and the fifth implant,

and further comprising:

a gate layer over the third channel and separated from the substrate by an insulating layer.

52. The device of claim 51, wherein

the gate layer is coupled with the conductive layer.

53. A semiconductor device for use in an RFID tag, comprising:

first and second RF ports;

a substrate having a source region and a first and second drain regions, the drain regions configured to be electrically coupled with the first and second RF ports respectively, wherein the source region is separated from the first and second drain regions by respective first and second transistor channels, and wherein the drain regions define a connecting channel between them; and

a conductive layer over the substrate and separated by an insulating layer from the substrate, the conductive layer configured to affect concurrently the first, second and connecting channels.

54. The device of claim 53, wherein

the first and second RF ports are formed on the substrate.

55. The device of claim 53, wherein

the source and drain regions are n type.

56. The device of claim 53, wherein

the source and drain regions are p type.

57. The device of claim 53, wherein

the conductive layer is cross-shaped.

58. The device of claim 53, wherein

the conductive layer is T-shaped.